

CONFINED SPACE ENTRY REQUIREMENTS

Safety Hazards in Confined Spaces

A. The Contractor shall comply with the following, including all appendices, when entering any confined space on Maryland Aviation Administration (MAA) property.

1. U.S. Department of Labor Occupational Safety and Health Administrations Standards OSHA 29 CFR 1910.146, 'Permit-Required Confined Spaces' and OSHA 29 CFR 1926, 'Safety and Health Regulations for Construction.'
2. The Maryland Occupational Safety and Health (MOSH) requirements of COMAR 09.12.35.

B. Definitions

1. **Acceptable entry conditions.** The conditions that must exist in a permit space to allow entry and to ensure that employees involved with a permit-required confined space entry can safely enter into and work within the space.
2. **Attendant.** An individual stationed outside one or more permit spaces who monitors the authorized entrants and who performs all attendant duties assigned in the MAA permit space program.
3. **Authorized entrant.** An employee who is authorized to enter a permit space.
4. **Blanking or blinding.** The absolute closure of a pipe, line, or duct by the fastening of a solid plate (such as a spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line, or duct with no leakage beyond the plate.
5. **"Confined space" is a space that:**
 - a. Is large enough and so configured that an employee can bodily enter and perform assigned work; and
 - b. Has limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry); and
 - c. Is not designed for continuous employee occupancy.
6. **Completion:** End of a given task.
7. **Double block and bleed.** The closure of a line, duct, or pipe by closing and locking or tagging two in-line valves and by opening and locking or tagging a drain or vent valve in the line between the two closed valves.
8. **Emergency.** Any occurrence (including any failure of hazard control or monitoring equipment) or event internal or external to the permit space that could endanger entrants.
9. **Engulfment.** The surrounding and effective capture of a person by a liquid or

finely divided (flowable) solid substance that can be aspirated to cause death by filling or plugging the respiratory system or that can exert enough force on the body to cause death by strangulation, constriction, or crushing.

10. **Entry.** The action by which a person passes through an opening into all confined space. Entry includes ensuing work activities in that space and is considered to have occurred as soon as any part of the entrant's body breaks the plane of an opening into the space.
11. **Entry permit (permit).** The written or printed document that is provided to allow and control entry into a permit space.
12. **Entry Supervisor.** The person responsible for determining if acceptable entry conditions are present at a permit space where entry is planned, for authorizing entry and overseeing entry operations, and for terminating entry as required by this section (Note: An entry supervisor also may serve as an attendant or as an authorized entrant, as long as that person is trained and equipped as required by this section for each role he or she fills. Also, the duties of entry supervisor may be passed from one individual to another during the course of an entry operation).
13. **Hazardous atmosphere.** An atmosphere that may expose employees to the risk of death, incapacitation, and impairment of ability to self-rescue (that is, escape unaided from a permit space), injury, or acute illness from one or more of the following causes:
 - a. Flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL);
 - b. Airborne combustible dust at a concentration that meets or exceeds its LFL (Note: This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet (1.52 m) or less).
 - c. Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent;
 - d. Atmospheric concentration of any substance for which a dose or a permissible exposure limit is published in the OSHA General Industry Standard Subpart G and Subpart Z, Toxic and Hazardous Substances, which could result in employee exposure in excess of its dose or permissible exposure limit (Note: An atmospheric concentration of any substance that is not capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or acute illness due to its health effects is not covered by this provision).
 - e. Any other atmospheric condition that is immediately dangerous to life or health. (Note: For air contaminants for which OSHA has not determined a dose or permissible exposure limit, other sources of information, such as Material Safety Data Sheets that comply with the Hazard Communication Standard published information, and internal documents can provide guidance in establishing acceptable atmospheric conditions).
14. **Hot work permit.** A permit allowing employees to perform work involving welding, cutting, or any task that would deplete oxygen, create toxic fumes

and vapors, or create the potential for fire or explosion. MAA's BWI Airport Fire and Rescue Department is the Authorizing Authority.

15. **Immediately dangerous to life or health (IDLH).** Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.
16. **Inerting.** The displacement of the atmosphere in a permit space by a noncombustible gas (such as nitrogen) to such an extent that the resulting atmosphere is noncombustible. (Note: This procedure produces an IDLH oxygen-deficient atmosphere).
17. **Isolation.** The process by which a permit space is removed from service and completely protected against the release of energy and material into the space by such means as: blanking or blinding; misaligning or removing sections of lines, pipes, or ducts; a double block and bleed system; lockout or tagout of all sources of energy; or blocking or disconnecting all mechanical linkages.
18. **Line breaking.** The intentional opening of a pipe, line, or duct that is or has been carrying flammable, corrosive, or toxic material, an inert gas, or any fluid at a volume, pressure, or temperature capable of causing injury.
19. **Non-permit confined space.** A confined space that does not contain or, with respect to atmospheric hazards, have the potential to contain any hazard capable of causing death or serious physical harm.
20. **Oxygen deficient atmosphere.** An atmosphere containing less than 19.5 percent oxygen by volume.
21. **Oxygen enriched atmosphere.** An atmosphere containing more than 23.5 percent oxygen by volume.
22. **Permit-required confined space (permit space).** A confined space that has one or more of the following characteristics:
 - a. Contains or has a potential to contain a hazardous atmosphere;
 - b. Contains a material that has the potential for engulfing an entrant;
 - c. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or
 - d. Contains any other recognized serious safety or health hazard.
23. **Permit-required confined space program (permit space program).** The MAA overall program for controlling, and where appropriate, for protecting employees from permit space hazards and for regulating employee entry into permit spaces.
24. **Permit system.** The MAA written procedure for preparing and issuing permits for entry and for returning the permit space to service following termination of entry.
25. **Prohibited condition.** Any condition in a permit space that is not allowed by the permit during the period when entry is authorized.

26. **Rescue service.** The personnel designated to rescue employees from permit spaces.
27. **Retrieval system.** The equipment (including a retrieval line, chest or full-body harness, wristlets, if appropriate, and a lifting device or anchor) used for non-entry rescue of persons from permit spaces.
28. **Standby Rescue Team.** Designated rescue personnel that are on site at all times during permit required entries, and are trained to the OSHA requirements for Confined Space Rescue.
29. **Testing.** The process by which the hazards that may confront entrants of a permit space are identified and evaluated. Testing includes specifying the tests that are to be performed in the permit space (Note: Testing enables employers both to devise and implement adequate control measures for the protection of authorized entrants and to determine if acceptable entry conditions are present immediately prior to, and during, entry).

C. The Contractor shall include his confined space entry program as part of the overall safety program and shall include the following:

1. Contactors shall follow, as applicable, OSHA 29 CFR 1910.146, "Permit-Required Confined Spaces" and OSHA CFR 1926, "Safety and Health Regulation for Construction," and the Code of Maryland (COMAR) 09.12.35, "Maryland Occupational Safety and Health Standards for Confined Spaces" when entering any confined space on Maryland Aviation Administration property.
2. Contractors who are required to enter into any confined space on MAA property shall be required to have successfully completed an OSHA compliant Confined Space Entry training course on Permit and Non-Permit entries prior to performing this task.
3. Contractors entering confined spaces on MAA property at BWI Marshall shall notify all entries in advance through BWI Airport Fire & Rescue Department On-Duty Division Chief of Operations, 410-859-7709.
4. Contractors entering confined spaces on Martin State Airport (MTN) property shall schedule all entries in advance with the MTN Operations Center, 410-682-8831.
5. Contractors shall provide **their own STANDBY** Rescue Team for all Immediately Dangerous to Life and Health (IDLH) permit required confined spaces.
6. Contractors shall be required to have rescue equipment and personnel trained in confined space rescue on site and in place to perform rescue during IDLH permit required confined space entries on MAA property.
7. Contractors shall be required to have a communications device capable of notifying the emergency services at BWI Marshall (410-859-7222) or emergency services at Martin State Airport (911) in the event of a fire, medical emergency or confined space rescue incident.
8. In instances where MAA and Contractor employees are working

simultaneously as authorized entrants in a permit space, the Contractor shall coordinate entry operations with the Engineer, MAA's Office of Maintenance and Utilities and MAA's Employee Risk Management Coordinator so that MAA and Contractor employees do not endanger each other.

9. The Contractor's Entry Supervisor shall be required to use and fill out the appropriate MAA confined space forms listed below. All forms listed below shall be used for all confined space entries on MAA property. Forms are attached.
 - a. **MAA-017 B – Confined Space Evaluation Form**
This is to determine Permit or Non-Permit Required Confined Space.
 - b. **MAA-017 C – Confined Space Entry Permit** (Contractor may substitute his own form if it contains the same information). The permit shall be on location at all times during entry.
 - c. **MAA-017 F – Confined Space Entry Critique/Review Form.** This form shall be used after each confined space entry on MAA property.
 - d. **MAA-27 A – BWI Airport Welding & Burning Permit** (MAA's BWI Airport Fire & Rescue Department is the Authorizing Authority). This form shall be used during any hot work, following FRD's policy.
 - e. **MAA-27 B – Martin State Airport Welding & Burning Permit** (MAA's BWI Airport Fire & Rescue Department is the Authorizing Authority). This form shall be used during any hot work, following FRD's policy.
10. The Entry Supervisor shall forward all completed forms to the Division of Employee Risk Management within 24 hours of the completion of the entry, FAX is acceptable.

MAA Division of Employee Risk Management
P.O. Box 8766
BWI Airport, MD 21240
410-859-7509 (Phone)
410-859-7114 (Fax)



Confined Space Entry Evaluation Form

NOTE: When completing this form, ensure that a response is provided for each question and at each entry.

Building Location: _____ Date: _____
Description of the space (including name and number): _____

SECTION 1. CONFINED SPACE ASSESSMENT

- Is the space large enough and configured that an employee can bodily enter and perform assigned work? YES NO
- Does the space have limited or restricted means for entry or exit? YES NO
- Is the space not designed for continuous employee occupancy? YES NO

If the answers to these three questions are "YES", it is a Confined Space and the questions in Section 2 must be completed.

IF THE ANSWER TO ANY QUESTION IS "NO", PLEASE EXPLAIN.

SECTION 2. PERMIT-REQUIRED CONFINED SPACE

Does the confined space:

- Contain or have the potential to contain a hazardous atmosphere? YES NO
- Contain or have the potential to contain a hazardous atmosphere? YES NO
- Contain any hazard capable of causing death or serious injury? YES NO
- Have an internal configuration that could trap or asphyxiate an entrant by inwardly sloping walls or tapering floors? YES NO
- Contain any other recognized serious safety or health hazard? YES NO

If the answers to the questions are "NO", the location is a Non-Permit-Required Confined Space. If the answer to any question is "YES", the questions in Section 3 must be completed.

- Does the space contain or have the potential to contain any of the following hazardous atmospheres?
 - A flammable gas, vapor, or mist in excess of 10% of its lower explosive limit (LEL)? YES NO
Identify the hazard(s) _____
 - Airborne combustible dust at a concentration that meets or exceeds its LEL? YES NO
 - An atmospheric oxygen concentration below 19.5% or above 23.5%? YES NO
 - An atmospheric oxygen concentration of any substance that is capable of causing death, incapacitation, impairment of ability to self-rescue, injury or acute illness? YES NO
Identify the hazard(s) _____
- Does the Permit-Required Confined Space contain a material that presents the potential to engulf an entrant? YES NO
Identify the hazard(s) _____
- Does the Permit-Required Confined Space have an internal configuration such an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor, which slopes downward, and taper to a small cross section? YES NO
- Does the Permit-Required Confined Space contain any other recognized serious safety or health hazard? YES NO
Identify the hazard(s) _____

If the answer to any of the questions in Section 3 is "YES", the location is a Permit-Required Confined Space and warning signs must be posted at each entrance.

POSTING REQUIREMENTS	<i>SURVEY DOCUMENTATION</i>
<ul style="list-style-type: none"> • Identify the number of entrances to be posted. _____ 	Survey Conducted By: Name : _____ Date: _____ Survey Reviewed By: Name : _____ Date: _____
<ul style="list-style-type: none"> • Identify the location of each 	Survey Conducted By:

entrance, if not readily
apparent.

Name

: _____ Date: _____

MAA-017 (B) R1-06

Related Forms MAA-017 [A](#), [C](#), [D](#), [E](#), [F](#), [G](#), [H](#), [I](#)

IDENTIFY THE GAS/VAPOR/MIST									
TOXIC GAS	Consult with Safety Office								
Other	Consult with Safety Office								

MAA-017 (C) R 1-06



Confined Space Entry Permit

NOTE: ENTRY INTO A PERMIT-REQUIRED CONFINED SPACE IS NOT PERMITTED UNLESS ACCEPTABLE ENTRY LEVELS ARE MAINTAINED

EQUIPMENT CALIBRATION	Monitoring Equipment:	Monitoring Equipment:	Monitoring Equipment:
Parameter			
Frequency of testing			
Results of Pre-Calibration			
Results of Post-Calibration			
Name of Tester/Date/Time			

Authorized Entrants

Authorized Attendants

Authorized Entry Supervisors

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

PERMIT AUTHORIZATION BY THE ENTRY SUPERVISOR:

I certify that actions necessary for safe entry and the completion of work have been completed and that conditions are acceptable for entry.

NAME _____

DATE/TIME _____

SIGNATURE _____

PERMIT CANCELLATION:

The entry was:

COMPLETED / TERMINATED

NAME _____

SIGNATURE _____

DATE _____ TIME _____

NOTES/COMMENTS

Emergency Telephone Number for Rescuer:

Fire Department Notified and Visited Site (Pre-plan Only): _____

Date: _____

Fire Department Signature: _____ Rank:

BWI Airport Fire & Rescue Department
Martin State Airport

911

410-859-7222

MAA-017 (C) R 1-06

Related Forms MAA-017 [A](#), [B](#), [D](#), [E](#), [F](#), [G](#), [H](#), [I](#)



Maryland Aviation Administration

Confined Space Entry Critique/Review Sheet

Entry Date: _____ Job Number: _____

Job Description: _____

Confined Space Entry Number: _____

Division/Contractor Name: _____

Contractor Address: _____

Location of Entry: _____

What went well? _____

What needs Improvements? _____

**MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION
BWI AIRPORT WELDING AND BURNING PERMIT**

SECTION A		
BUILDING AND LOCATION:	_____	
COMPANY NAME:	_____	
ADDRESS:	_____	
PHONE NUMBER:	_____	
PERMIT REQUESTED BY: <small>(please print name)</small>	_____	
PROJECT DESCRIPTION:	_____	
SECTION B		
WORK DATES:	START: ___/___/___	END: ___/___/___
APPROX. WORK HOURS:	FROM: _____	TO: _____
SECTION C		
<p>CONTRACTOR MUST NOTIFY THE FIRE-RESCUE SERVICE COMMUNICATIONS CENTER AT 410-859-7117 or 7118 PRIOR TO STARTING ANY WORK, AND ALSO AT THE COMPLETION OF EACH DAY OR SHIFT. IN CASE OF EMERGENCY, PLEASE DIAL 410-859-7222.</p>		
_____	_____	___/___/___
CONTRACTOR'S SIGNATURE	PLEASE PRINT NAME	DATE
SECTION D		
<p>CONTRACTOR IS AWARE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, STANDARD NO. 51B, AND THE STATE FIRE PREVENTION CODE, NFPA-1, CHAPTER 18, SECTION 18-1 THROUGH 18-3 (LATEST EDITION). IF NOT AWARE OF THESE STANDARDS AND CODES, CONTRACTOR MUST REVIEW EACH PRIOR TO SIGNING BELOW.</p>		
<p>I HAVE READ AND UNDERSTAND THE STANDARDS & CODES AS OUTLINED IN SECTION D, PARAGRAPH ABOVE:</p>		
_____	_____	___/___/___
CONTRACTOR'S SIGNATURE	PLEASE PRINT NAME	DATE
SECTION E		
<p>FAILURE TO COMPLY WITH SECTIONS C & D OF THIS PERMIT WILL RESULT IN REVOCATION OF PERMIT AND THE IMMEDIATE STOPPAGE OF ALL WORK. ALARMS GENERATED BY WELDING/BURNING DUE TO NEGLECT OR ACCIDENTAL ACTIVATION OF A FIRE ALARM SYSTEM MAY RESULT IN A CIVIL CITATION AS OUTLINED UNDER ARTICLE 27, §156 A., B., & C. OF THE ANNOTATED CODE OF MARYLAND.</p>		
_____	_____	___/___/___
CONTRACTOR'S SIGNATURE	PLEASE PRINT NAME	DATE
SECTION F		
BWI AIRPORT FIRE AND RESCUE DEPARTMENT AUTHORIZATION		
_____	_____	___/___/___
AUTHORIZING SIGNATURE	PLEASE PRINT NAME	DATE
INSPECTED BY	EMPLOYEE # _____	

Original - Contractor

Canary - CDC

Pink- Fire and Rescue Department

MAA-077 A R2-03

NOTE:

THIS FORM SHALL BE OBTAINED FROM THE BWI AIRPORT FIRE & RESCUE DEPARTMENT.

**MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION
MARTIN STATE AIRPORT WELDING AND BURNING PERMIT**

SECTION A		
BUILDING AND LOCATION:	_____	
COMPANY NAME:	_____	
ADDRESS:	_____	
PHONE NUMBER:	_____	
PERMIT REQUESTED BY: <small>(please print name)</small>	_____	
PROJECT DESCRIPTION:	_____	
SECTION B		
WORK DATES:	START: ___/___/___	END: ___/___/___
APPROX. WORK HOURS:	FROM: _____	TO: _____
SECTION C		
CONTRACTOR MUST NOTIFY THE AIRPORT OPERATIONS OFFICE AT 410-682-8831/8800 PRIOR TO STARTING ANY WORK, AND ALSO AT THE COMPLETION OF EACH DAY OR SHIFT. IN CASE OF EMERGENCY, PLEASE DIAL 911.		
_____	_____	___/___/___
CONTRACTOR'S SIGNATURE	PLEASE PRINT NAME	DATE
SECTION D		
CONTRACTOR IS AWARE OF THE NATIONAL FIRE PROTECTION ASSOCIATION, STANDARD NO. 51B, AND THE STATE FIRE PREVENTION CODE, NFPA-1, CHAPTER 18, SECTION 18-1 THROUGH 18-3 (LATEST EDITION). IF NOT AWARE OF THESE STANDARDS AND CODES, CONTRACTOR MUST REVIEW EACH PRIOR TO SIGNING BELOW.		
I HAVE READ AND UNDERSTAND THE STANDARDS & CODES AS OUTLINED IN SECTION D, PARAGRAPH ABOVE:		
_____	_____	___/___/___
CONTRACTOR'S SIGNATURE	PLEASE PRINT NAME	DATE
SECTION E		
FAILURE TO COMPLY WITH SECTIONS C & D OF THIS PERMIT WILL RESULT IN REVOCATION OF PERMIT AND THE IMMEDIATE STOPPAGE OF ALL WORK. ALARMS GENERATED BY WELDING/BURNING DUE TO NEGLECT OR ACCIDENTAL ACTIVATION OF A FIRE ALARM SYSTEM MAY RESULT IN A CIVIL CITATION AS OUTLINED UNDER ARTICLE 27, §156 A., B., & C. OF THE ANNOTATED CODE OF MARYLAND.		
_____	_____	___/___/___
CONTRACTOR'S SIGNATURE	PLEASE PRINT NAME	DATE
SECTION F		
MARTIN STATE AIRPORT OPERATIONS CENTER AUTHORIZATION		
_____	_____	___/___/___
MTN OPERATIONS CENTER AUTHORIZING SIGNATURE	PLEASE PRINT NAME	DATE

MAA-027 B R-2/03

NOTE:

THIS FORM SHALL BE OBTAINED FROM THE MARTIN STATE AIRPORT OPERATIONS CENTER.

